

AMENDMENTS TO THE CLAIMS

1. (Currently amended) A method for establishing a bi-directional data link layer service connection for a bi-directional service to be provided between at least first and second users, connected to at least first and second respective data link layer ports of first and second nodes through a network, the method comprising:

responsive to a request to initiate the service ~~connection~~ at the first node, generating a local index at the first node indicative of the service to be provided;

sending a first signaling message containing the index from the first node and service parameters of both of the first and second nodes via the network to the second node, wherein the service parameters indicate at least one of the first and second data link layer ports;

upon receiving the message at the second node, initiating the service ~~connection~~ at the second node responsive to the index and the service parameters, and sending a second signaling message via the network to the first node; and

upon receiving the second signaling message at the first node, activating the service indicated by the index on the at least one of the data link layer ports indicated by the service parameters.

2. (Canceled)

3. (Currently amended) A method according to ~~claim 2~~ claim 1, wherein the service parameters are indicative of the data link port on the first node on which the service is to be provided.

4. (Currently amended) A method according to ~~claim 2~~ claim 1, wherein the service parameters are indicative of the data link port on the second node on which the service is to be provided.

5. (Currently amended) A method according to ~~claim 2~~
claim 1, wherein the service connection comprises an Ethernet connection, and wherein the index is further indicative of a Virtual LAN (VLAN) address to which the service is to be provided.
6. (Original) A method according to claim 1, wherein the service comprises a transparent LAN service (TLS), and wherein the index is indicative of a TLS instance on which the service is to be provided.
7. (Original) A method according to claim 1, wherein the service comprises a SONET service, and wherein the service parameters are indicative of a SONET path on which the service is to be provided.
8. (Original) A method according to claim 1, wherein the service parameters further contain a field identifying a service type of the requested service.
9. (Original) A method according to claim 1, wherein the service parameters are configured to form a part of a Management Information Base maintained at the nodes.
10. (Original) A method according to claim 1, wherein sending the first signaling message comprises sending a signaling packet in which the service parameters are encapsulated in an object that is ignored and passed on by packet-switching routers along a route of the packet, and is received and read only at the second node.
11. (Original) A method according to claim 10, wherein sending the signaling packet comprises sending a resource reservation packet in which the object has a class number that causes the routers to ignore it.
12. (Currently amended) A method for establishing a data link service connection for a service to be provided between first and second nodes via a label-switched tunnel through a network, the method comprising:

responsive to a request to initiate the service connection at the first node, generating a local index at the first node indicative of the service to be provided;

sending a signaling packet from the first node via the network to the second node, with the index encapsulated in the signaling packet in an object comprising at least one bit that is set to a value selected so as to cause the object to be ignored and passed on by label-switching routers along the label-switched tunnel, and is received and read only at the second node; and

initiating the service connection at the second node responsive to the index received in the signaling packet.

13. (Original) A method according to claim 12, wherein sending the signaling packet comprises sending a resource reservation packet in which the object has a class number that causes the label-switching routers to ignore it.

14. (Currently amended) A communication network, comprising:

first and second access nodes; and

a plurality of intermediate nodes that are configured to operate as packet-switching routers so as to convey data packets between the first and second access nodes,

wherein the access nodes are configured so that responsive to a request to initiate a bi-directional data link layer service connection at the first node ~~for a bi-directional service~~ to be provided between at least first and second users, connected to at least first and second respective data link layer ports of the first and second nodes, a local index is generated at the first node indicative of the service to be provided, and a first signaling message containing the index and service parameters of both of the first and second nodes is sent from the first node via the intermediate nodes to the

second node, wherein the service parameters indicate at least one of the first and second data link layer ports, and so that upon receiving the first signaling message at the second node, the service ~~connection~~ is initiated at the second node responsive to the index and the service parameters, and a second signaling message is sent via the intermediate nodes to the first node, and so that upon receiving the second signaling message at the first node, the service indicated by the index is activated on the at least one of the data link layer ports indicated by the service parameters.

15. (Canceled)

16. (Currently amended) A network according to ~~claim 15~~ claim 14, wherein the service parameters are indicative of the data link port on the first node on which the service is to be provided.

17. (Currently amended) A network according to ~~claim 15~~ claim 14, wherein the service parameters are indicative of the data link port on the second node on which the service is to be provided.

18. (Currently amended) A network according to ~~claim 15~~ claim 14, wherein the service connection comprises an Ethernet connection, and wherein the service parameters are further indicative of a Virtual LAN (VLAN) address to which the service is to be provided.

19. (Original) A network according to claim 14, wherein the service comprises a transparent LAN service (TLS), and wherein the service parameters are indicative of a TLS instance on which the service is to be provided.

20. (Original) A network according to claim 14, wherein the service comprises a SONET service, and wherein the service parameters are indicative of a SONET path on which the service is to be provided.

21. (Original) A network according to claim 14, wherein the service parameters further contain a field identifying a service type of the requested service.

22. (Original) A network according to claim 14, wherein the service parameters are configured to form a part of a Management Information Base maintained at the nodes.

23. (Original) A network according to claim 14, wherein the first signaling message comprises a signaling packet in which the service parameters are encapsulated in an object that is ignored and passed on by the intermediate nodes along a route of the packet, and is received and read only at the second node.

24. (Original) A network according to claim 23, wherein the signaling packet comprises a resource reservation packet in which the object has a class number that causes the label-switching routers to ignore it.

25. (Currently amended) A communication network, comprising:

first and second access nodes; and

a plurality of intermediate nodes that are configured to operate as label-switched routers so as to provide a label-switched tunnel between the first and second access nodes,

wherein the access nodes are configured so that responsive to a request to initiate the service connection at the first node, a local index is generated at the first node indicative of the service to be provided, and a signaling packet is sent from the first node via the network to the second node, with the index encapsulated in the signaling packet in an object comprising at least one bit that is set to a value selected so as to cause the object to be ignored and passed on by label-switching routers along the tunnel, and is received and read only at the second node, and so

that the service connection is initiated at the second node responsive to the index received in the signaling packet.

26. (Original) A network according to claim 25, wherein the signaling packet comprises a resource reservation packet in which the object has a class number that causes the label-switching routers to ignore it.

27. (Currently amended) A method for establishing a bi-directional data link layer service connection for a bi-directional service to be provided between at least first and second users, connected to at least first and second respective data link layer ports of first and second nodes via first and second label-switched tunnels through a network, the method comprising:

responsive to a request to initiate the service connection at the first node, generating a local index at the first node indicative of parameters of the service to be provided, wherein the parameters comprise an indication of at least one of the first and second data link layer ports;

sending a first signaling message containing the index from the first node via the network to the second node;

upon receiving the message at the second node, initiating the service connection at the second node responsive to the index, and sending a second signaling message via the network to the first node; and

upon receiving the second signaling message at the first node, activating the service indicated by the index via the first and second label-switched tunnels on the at least one of the data link layer ports indicated by the parameters.

28. (Canceled)

29. (Currently amended) A method according to ~~claim 28~~
claim 27, wherein the index is indicative of the data
link port on the first node on which the service is to be
provided.

30. (Currently amended) A method according to ~~claim 28~~
claim 27, wherein the index is indicative of the data
link port on the second node on which the service is to
be provided.

31. (Currently amended) A method according to ~~claim 28~~
claim 27, wherein the service connection comprises an
Ethernet connection, and wherein the index is further
indicative of a Virtual LAN (VLAN) address to which the
service is to be provided.

32. (Original) A method according to claim 27, wherein
the service comprises a transparent LAN service (TLS),
and wherein the index is indicative of a TLS instance on
which the service is to be provided.

33. (Original) A method according to claim 27, wherein
the service comprises a SONET service, and wherein the
index is indicative of a SONET path on which the service
is to be provided.

34. (Original) A method according to claim 27, wherein
the index further contains a field identifying a service
type of the requested service.

35. (Original) A method according to claim 27, wherein
the index is configured to form a part of a Management
Information Base maintained at the nodes.

36. (Original) A method according to claim 27, wherein
sending the first signaling message comprises sending a
signaling packet in which the index is encapsulated in an
object that is ignored and passed on by label-switching
routers along the tunnel, and is received and read only
at the second node.

37. (Original) A method according to claim 36, wherein sending the signaling packet comprises sending a resource reservation packet in which the object has a class number that causes the label-switching routers to ignore it.

38. (Currently amended) A communication network, comprising:

first and second access nodes; and

a plurality of intermediate nodes that are configured to operate as label-switched routers so as to provide first and second label-switched tunnels between the first and second access nodes,

wherein the access nodes are configured so that responsive to a request to initiate a bi-directional data link layer service connection at the first node ~~for a~~ bidirectional service to be provided between at least first and second users, connected to at least first and second respective data link layer ports of the first and second nodes, a local index is generated at the first node indicative of parameters of the service to be provided, wherein the parameters comprise an indication of at least one of the first and second data link layer ports, and a first signaling message containing the index is sent from the first node via the network to the second node, and so that upon receiving the first signaling message at the second node, the service ~~connection~~ is initiated at the second node responsive to the index, and a second signaling message is sent via the network to the first node, and so that upon receiving the second signaling message at the first node, the service indicated by the index is activated via the first and second label-switched tunnels on the at least one of the data link layer ports indicated by the parameters.

39. (Canceled)

40. (Currently amended) A network according to ~~claim 39~~
claim 38, wherein the index is indicative of the data
link port on the first node on which the service is to be
provided.

41. (Currently amended) A network according to ~~claim 39~~
claim 38, wherein the index is indicative of the data
link port on the second node on which the service is to
be provided.

42. (Currently amended) A network according to ~~claim 39~~
claim 38, wherein the service connection comprises an
Ethernet connection, and wherein the index is further
indicative of a Virtual LAN (VLAN) address to which the
service is to be provided.

43. (Original) A network according to claim 38, wherein
the service comprises a transparent LAN service (TLS),
and wherein the index is indicative of a TLS instance on
which the service is to be provided.

44. (Original) A network according to claim 38, wherein
the service comprises a SONET service, and wherein the
index is indicative of a SONET path on which the service
is to be provided.

45. (Original) A network according to claim 38, wherein
the index further contains a field identifying a service
type of the requested service.

46. (Original) A network according to claim 38, wherein
the index is configured to form a part of a Management
Information Base maintained at the nodes.

47. (Original) A network according to claim 38, wherein
the first signaling message comprises a signaling packet
in which the index is encapsulated in an object that is
ignored and passed on by the label-switched routers along
the tunnel, and is received and read only at the second
node.

48. (Original) A network according to claim 47, wherein the signaling packet comprises a resource reservation packet in which the object has a class number that causes the label-switched routers to ignore it.